Serrated hand hoe and mower blades, DIY

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https://sites.google.com/view/low-tech-farm-tools

This invention was declared public domain on August 5, 1991, a gift to humanity.

The hand hoe uses a sharp straight edge to cut plant roots and stems. The hoe can be improved by grinding slanted grooves on its cutting edge (Figure 1). The grooves give a serrated edge to the hoe and keep the plant from sliding out of the cutting edge as it cut and tear. This modification can be made with a hand-held electric disk grinder or stone-grinding wheel.

A hand-held electric disk grinder with a 4 1/2 inch (114 mm) diameter by 3/16-inch (4.8 mm) thick grinding disk is used (Figure 2). The grooves are approximately 1/32 inch (0.8 mm) deep by 5/8 inch (16 mm) long, spaced 1/2 inch (13 mm) apart and ground on the flat side of the hoe that faces the person. Compared with the beveled side facing the earth, grooves ground on the flat side of the hoe will not wear out as quickly and the grooves are not ground off when the blade is sharpen on the beveled side. The grooves are slanted away from the hoe handle. Slants on the left side of the hoe are mirror images of the slants on the right side of the hoe. This modification can be made in less than 2 minutes.

Other applications of serration include rotary mower blades (Figure 2). For lawn and rotary mower blades, the grooves are ground on the flat side of the blade, perpendicular to the cutting edge and are spaced approximately 5/8 inch (16 mm) apart (Figure 2). After grinding the grooves, the mower blade must be balanced to reduce vibration during use of blade.

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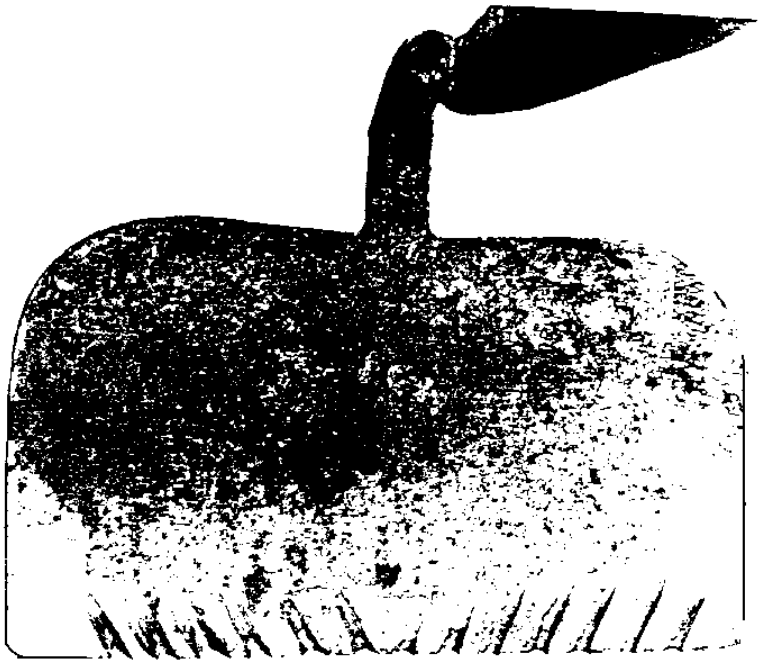

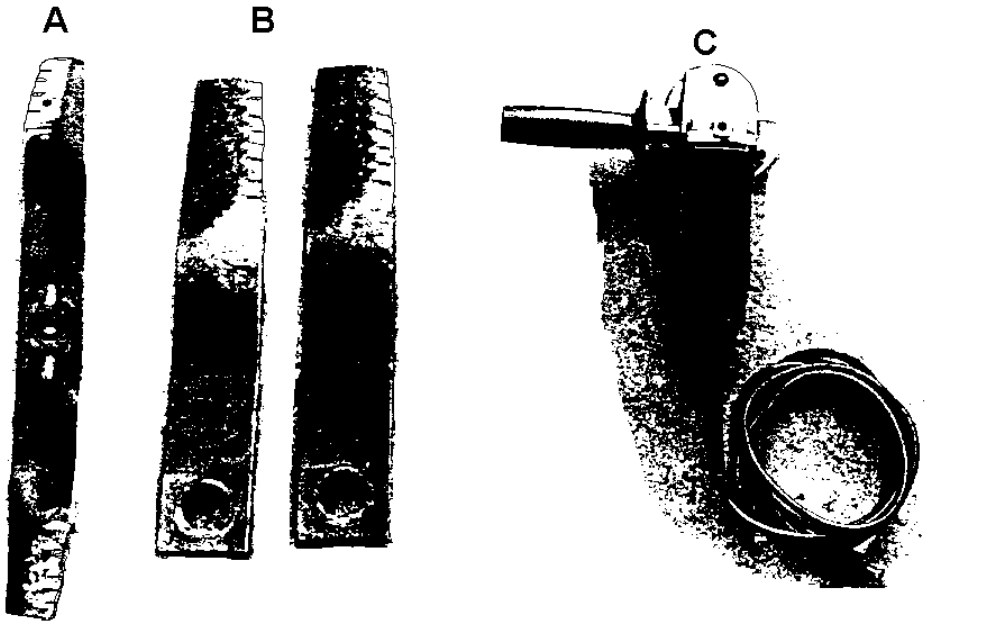

Top Figure. Hand hoe with grooves.
Bottom Figure. Rotary lawn mower blade, 500 mm (20 inch) (A), rotary mower blades for 1.27 m (50 inch) cut (B), and hand held disk grinder.